Table S.2. Comparison of experimental Raman shifts of Uranophane-α (cm-1).

|  |  |  |  |
| --- | --- | --- | --- |
| **Frost *et al.* (2006a)**  **(Sample-m31300)** | **Frost *et al.* (2006b)**  **Sample-Shaba - 77 K** | **Frost *et al.* (2006b)**  **Sample-Eagle - 77 K** | **Assignment** |
| 3492 | 3494 | 3534 | ν(OH |
| 3463 | 3437 | 3434 | ν(OH) |
| 3358 | 3382 | 3381 | ν(OH) |
| - | 3326 | 3322 | -- |
| - | 3310 | - | - |
| 3216 | - | 3224 | ν(OH) |
| - | - | 3142 | - |
| 2900 | - | - | - |
| 2729 | - | - | - |
| 2477 | - | - | - |
| 2137 | - | - | - |
| - | 1905 | 1905 | - |
| - | 1371 | 1499 | - |
| - | 1272 | 1314 | - |
| - | 1169 | 1164 | - |
| 1005 | - | 995 | νa(SiO44-) (ν3) |
| 964 | - | - | - |
| 960 | 965 | 964 | νs(SiO44-) (ν1) |
| 950 | 954 | 955 | - |
| 886 | 886 | 886 | - |
| 839 | - | 822 | - |
| 797 | 800 | 800 | νs(UO22+) |
| 793 | 789 | 788 | - |
| 786 | - | - | - |
| - | - | 761 | - |
| 711 | 716 | 715 | - |
| - | 627 | 629 | - |
| 545 | 547 | 547 | ν4(SiO44-) |
| - | 525 | 522 | - |
| 469 | 469 | 471 | ν2(SiO44-) |
| - | - | 444 | - |
| - | 402 | 406 | - |
| 399 | 397 | 398 | ν2(SiO44-) |
| 376 | 382 | - | - |
| 347 | 335 | 334 | - |
| 325 | 323 | 323 | δ(UO22+) |
| 306 | 307 | 307 | - |
| 289 | 296 | 296 | δ(UO22+) |
| 280 | 286 | 286 | δ(UO22+) |
| 250 | 257 | 268 | δ(UO22+) |
| - | 235 | 256 | - |
| - | 225 | 225 | - |
| 214 | 212 | 212 | δ(UO22+) |
| 205 | 196 | 195 | - |
| 167 | - | - | - |
| 139 | - | - | - |
| 137 | - | - | - |
| 122 | - | - | - |
| 112 | - | - | - |